

AMENDMENTS TO THE SPECIFICATION

I. Please replace the paragraph on page 2, line 14 - 21, with the following amended paragraph:

Nowadays, the Bluetooth technology is becoming increasingly popular. Many Bluetooth earphones are on the market, and they usually accompany mobile phones for hands-free use. This kind of Bluetooth earphone has only a single function and can't be used for other applications. ~~Accordingly, the present invention aims to integrate a wireless Bluetooth module in the above multifunctional mobile disk to replace the original wired transmission method with a wireless transmission way for transmission of digital data and voice signals to a Bluetooth earphone.~~

Accordingly, a solution of integration a mobile storage device capable of playing an MP3 digital file with a Bluetooth earphone module to accomplish wireless transmission is desired in the industrial field.

II. Please replace the SUMMARY OF THE INVENTION with the following amended SUMMARY OF THE INVENTION:

SUMMARY OF THE INVENTION

~~An object of the present invention is to integrate a wireless Bluetooth module like a Bluetooth earphone into a multifunctional mobile storage device like a small mobile disk, an MP3 walkman or a small digital voice recorder~~ The primary objective of this invention is to provide a mobile storage device like a small mobile disk, an MP3 walkman or a small digital voice recorder integrated with a Bluetooth earphone module to accomplish wireless connection with a remote device like a Bluetooth computer, a Bluetooth PDA or a Bluetooth MP3 walkman for wireless transmission of digital data, MP3 digital file or voice signals, thereby enhancing the wireless transmission function of the multifunction mobile storage device.

To achieve the above object, the present invention provides a mobile storage device ~~with a wireless Bluetooth module attached thereto~~, which comprises a memory control module connected with at least a memory for storage of digital data, an MP3 processing module connected to the memory control module and used to encode/decode a voice signal and an MP3 digital file, a Bluetooth earphone module movably inserted into the storage device and connected to the

memory control module and the MP3 processing module ~~and capable of accomplishing~~ to accomplish wireless transmission of digital data or voice signals with a remote device using the same frequency and channel, and an electronic control switch connected to the MP3 processing module and the Bluetooth earphone module and also connected with at least an earphone and a microphone. Digital data or voice I/O signals transmitted by the Bluetooth earphone module or the MP3 processing module can be switched by the electronic control switch to achieve wireless transmission function of the mobile storage device.

~~Another object off the present invention is to provide the above mobile storage device with a wireless Bluetooth module attached thereto, in which the MP3 processing module can be use as an MP3 walkman or a recording device.~~

~~Yet another object of the present invention is to provide the above mobile storage device with a wireless Bluetooth module attached thereto. The remote device is also a Bluetooth module, which can be connected to a computer device, a mobile phone, a Bluetooth earphone, a PDA, or another mobile storage device to accomplish sharing and transmission of data stored in the memory.~~

~~Still another object of the present invention is to provide the above mobile storage device with a wireless Bluetooth module attached thereto, where when the remote device is connected to a mobile phone and the mobile phone has an incoming call, the electronic control switch can be controlled to Switch me~~

~~earphone and the microphone to be connected to the Bluetooth earphone module for accomplishing the effect of automatically answering the incoming call.~~

The present invention provides a movable Bluetooth earphone module attached to a mobile storage disk for providing wireless transmission function, and detached from the mobile storage device to disable wireless transmission function of the mobile storage device.

The detailed technology and preferred embodiments implemented for the subject invention are described in the following paragraphs accompanying the appended drawings for people skilled in this field to well appreciate the features of the claimed invention.

III. Please replace the BRIEF DESCRIPTION OF THE DRAWINGS with the following amended BRIEF DESCRIPTION OF THE DRAWINGS:

BRIEF DESCRIPTION OF THE DRAWINGS

~~The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing, in which:~~

FIG. 1 is a perspective view and a wireless connection architecture diagram of the present invention;

FIG. 2 is a circuit block diagram of the present invention;

FIG. 3 is an application diagram of the present invention showing wireless connection between the present invention and a mobile phone; and

FIG. 4 is an application diagram of the present invention showing sharing of MP3 files.

IV. Please replace the thirteen consecutive paragraphs beginning on page 4, line 24, and ending on page 9, line 15, with the following amended paragraphs:

As shown in FIG. 1, the present invention provides a mobile storage device 1 with a ~~wireless~~ Bluetooth earphone module 10 attached thereto. The mobile storage device 1 can be a multifunctional flash memory disk having functions of storage of digital data, an MP3 walkman or a recording device. The Bluetooth earphone module 10 can be for wireless transmission with at least ~~[[a]]~~ one remote device. The remote device has also a wireless Bluetooth module (a remote device having a wireless Bluetooth module will be briefly termed as a remote Bluetooth module below), and can transmit digital or voice data using the same frequency and channel. The remote Bluetooth module can be a computer equipment 100, a mobile phone 101, a PDA 102, a Bluetooth earphone/microphone 103 (shown in FIG. 4), or another mobile storage device 104.

The mobile storage device 1 of the present invention has an outer shell 11 with a display 12 and a plurality of function ~~operation~~ keys 13 arranged thereon. The display 12 can display ~~the~~ information (e.g., the directory and name) of ~~the~~ an MP3 digital file being played. The function ~~operation~~ keys 13 can be used to select the function of the mobile storage device 1, such as, for example, MP3 playback function, voice recording function, memory function or transmission function, and can also be used to select the MP3 file to be played. The function ~~operation~~ keys 13 can comprise a playback key, a stop key, a recording key and a volume key.

The outer shell 11 has an opening at the upper end thereof, and forms an accommodating groove. The Bluetooth earphone module 10 can be inserted into or detached from the accommodating groove. When the Bluetooth earphone module 10 is inserted into the accommodating groove, it can be connected with internal circuits of the mobile storage device 1 to ~~become a Bluetooth module of~~ make the mobile storage device 1 ~~for~~ accomplishing wireless transmission with ~~the~~ remote Bluetooth module. When the Bluetooth earphone module 10 is detached from the accommodating groove, it can be used as a common Bluetooth earphone. Besides, an earphone/microphone connection port 14 can be provided on the outer shell 11 for connection with an earphone 15 and a microphone 16. The microphone 16 is preferably installed inside the outer shell 11.

As shown in FIG. 2, the mobile storage device 1 of the present invention at least comprising a memory control module 21, an MP3 processing module 22, a Bluetooth earphone module 23 and an electronic control switch 24. The electronic control switch 24 is electrically connected to the earphone 15 and the microphone 16. The memory control module 21 is electrically connected with at least ~~[[a]]~~ one memory 211 capable of storing considerable quantities of digital data. The memory 211 can be a flash memory. It is also feasible that the memory control module ~~211~~ 21 is a memory card reader and the memory ~~card~~ 211 is a memory card movably inserted into the memory card reader 21 for expansion or replacement of the memory card.

The MP3 processing module 22 is electrically connected to the memory control module 21, and has at least a first output signal line SO1 and a first input signal line SI1 both connected to the electronic control switch 24. The MP3 processing module ~~42~~ 22 can be an MP3 decoding chip capable of decoding an MP3 digital file in the memory 211 into a voice signal outputted to the first output signal line SO1 and then to the earphone 15 through control of the electronic control switch 24. The electronic control switch 24 can also control the voice signal to be outputted to the Bluetooth earphone module 23 for wireless transmission to a remote Bluetooth module 200 like the Bluetooth earphone/microphone 103 (shown in FIG. 4), thereby forming ~~an~~ a wireless MP3 playback device.

The MP3 processing module 22 is further electrically connected with the display 12 and the function ~~operation~~ keys 13. The display 12 can be used to display the information of ~~an~~ the MP3 digital file to be displayed. The function ~~operation~~ keys 13 include the playback key, the stop key and the volume key, and can be used to control playback or stop of the MP3 digital file, or select the MP3 digital file to be played by the MP3 processing module 22, or control the volume.

The MP3 processing module 22 can also be an MP3 encoding chip capable of encoding the voice signal inputted from the microphone 16 via the first input signal line SI1 into the MP3 digital file stored into the memory 211 through control of the electronic control switch 24, thereby forming a voice recording device. Similarly, the electronic control switch 24 can control the Bluetooth earphone module 23 to send the voice signal of the remote Bluetooth module 200 like the Bluetooth earphone/microphone 103 to the MP3 processing module 22. The function ~~operation~~ keys 13 can further comprise ~~the~~ a recording key for controlling the MP3 processing module 22 to record voice.

The Bluetooth earphone module 23 can be movably inserted into or detached from the memory control module 21 and the MP3 processing module 22. The Bluetooth earphone module 23 can accomplish wireless transmission of the digital data, the MP3 digital file or the voice signal with at least one remote Bluetooth module 200 using the same frequency and channel. The Bluetooth

earphone module 23 has at least a second output signal line S02 and a second input signal line SI2 both connected to the electronic control switch 24.

When the remote Bluetooth module 200 is the computer equipment 100, because the Bluetooth earphone module 23 is connected to the memory control module 21, the memory control module 21 can accomplish wireless connection with the computer equipment 100 for direct transmission of digital data. This is an application of flash memory disk. The transmitted digital data can be an MP3 digital file directly stored in the memory 211 for expansion or replacement of the MP3 digital file.

As shown in FIG. 3, when the remote Bluetooth module 200 is ~~[[a]]~~ the mobile phone 101, the Bluetooth earphone module 23 can accomplish wireless connection on with the mobile phone 101. The electronic control switch 24 can switch the second output signal line SO2 and the second input signal line SI2 to electrically connect the earphone/microphone 103 for answering the mobile phone 101.

If the present invention is used for the function of ~~an~~ the MP3 walkman, the electronic control switch 24 will switch the first output signal line SO1 to electrically connect the earphone 15 so that one can listen to the MP3 digital file. When the mobile phone 101 has an incoming call, the electronic controls switch 24 can automatically switch the second output signal line S02 and the second input

signal line S12 to electrically connect the earphone 15 and the microphone 16 for automatically answering the incoming call, respectively.

As shown in FIG. 4, when the present invention is used for the function of ~~an~~ the MP3 walkman and the remote Bluetooth module 200 includes a plurality of Bluetooth earphones/microphones 103, all the Bluetooth earphone module 23 and the plurality of Bluetooth earphones/microphones 103 can use the same frequency and channel so that all the Bluetooth earphones/microphones 103 can be used for listening to the MP3 digital file being played. This application is preferably applied in a multi-user language learning situation. If the remote Bluetooth module 200 is another mobile storage device, sharing of MP3 digital files can be accomplished through wireless transmission. Of course, the Bluetooth earphone module 23 can switch different channels to avoid mutual interference.

To sum up, the Bluetooth earphone module 23 is attached to the mobile storage device 1 for providing wireless transmission function, and detached from the mobile storage device 1 to disable wireless transmission function of the mobile storage device 1, the mobile storage device 1 without the Bluetooth module 23 can still process other aforementioned functions but without wireless transmission. The ~~the~~ electronic control switch 24 of the present invention can make use of function control of the function ~~operation~~ keys 13 to switch the Bluetooth earphone module 23 and the remote Bluetooth module ~~23~~ 200 for wireless transmission of digital data, or switch the first output signal line SO1 or the second

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output signal line SO2 to electrically connect the earphone 15, or switch the first input signal line SI1 or the second input signal line SI2 to electrically connect the microphone ~~15~~ 16.